BBV 1-2-1 Protocol Converter

Installation Guide

BBV single camera protocol converter

Software version CONV3V41

Building Block Video Ltd
17 Apex Park,
Diplocks Industrial Estate,
Hailsham, East Sussex, BN27 3JU, UK
Tel: + 44 (0) 1323 842727
Fax: +44 (0) 1323 842728
www.bbvcctv.com

This manual covers BBV single channel protocol converter software version **CONV3_V41**

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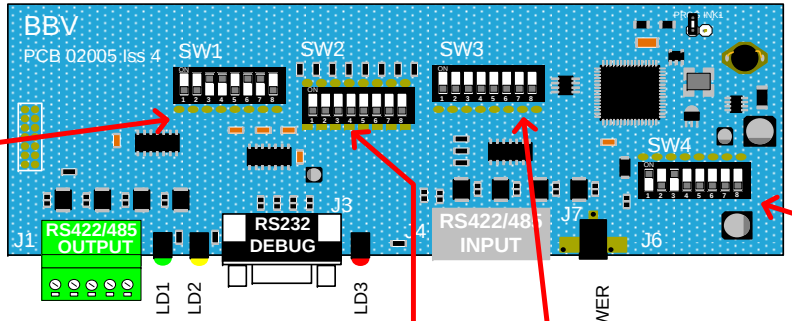
Protocols compatible with the BBV 1-2-1 converter:

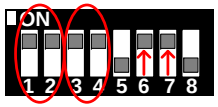
360 Vision
BBV 422
CBC SMD20
Chugai
Conway
COP (Pelco D or P)
Dennard 2050
DM DTMT (using TAD3 with special s/w)
Forward Vision Mic1-300/400
Ganz ZC-S122/123
JVC 676
LG dome (Pelco D)
Mark Mercer
Meyertech ZVR510 VICTA protocol
Molynx 250/260
NIO D86/Intercepter (Pelco D)
Panasonic CS850/860
Pelco D
Pelco P
Philips RS232/485 (bi-phase via Philips LTC8780/50)
Photoscan fixed speed pan/tilt
Samsung 641/643 dome 421P camera
Sanyo VCC9200P
Sensormatic RS422 (Ultradome)
Star MD2000
VCL
Vicon Surveyor & V1305DC
Videcon VHSD860 Dome (Pelco P-9600,N,8,1)
Videcon VPC451 Camera (Pelco D-2400,N,8,1)
Videotec Ulisse (Pelco D)
Vista PowerDome

BBV 1-2-1 converter Manual Version History

V41	30 Oct 13	1. Mark Mercer In to the BBV121 Converter SW3-2,3,4,5,6,7,8 ON
V39	18 April 2013	1. All Output protocols now supported from the Pelco D/P Input.
V38	15 Jun 2012	1. Added Dennard RS485 input protocol SW3-6,7,8 ON 2. Added ability to force output protocol address to 1 using SW3-1 as shown on page 5 3. Modified diagrams pages 5 & 6 to show MOLYNX input connection, GREEN pair 4. Document camera 1-16 limitation using Molynx 6000 controller and Molynx In protocol
V37.1	6 Dec 2011	1.Reformat switch settings page 5 Fig 1, PCB layout
V37	27 Aug 2011	1.Added Molynx D type input telemetry
V36.2	15 July 2010	1.Change text on page 5 SW3 read output and changed BBV485 for BBV422
V36.1	15 June 2010	1.Change text on page 30 to read SW1/3&4 instead of SW3 & SW4
V36	28 May 2010	1.Release of the BBV single channel protocol 1-2-1 converter



SW1 - termination



1/2	**DATA In Termination**
ON	Terminated
3/4	**DATA Out Termination**
ON	Terminated
5	Not used
6/7	**MUST BE ON**
8	Not used

SW2 address selection.
For settings see page 7.

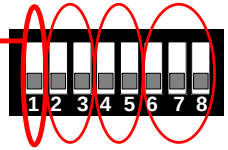
LED guide

- GREEN LD1 - data IN
- YELLOW LD2 - data ERROR
- RED LD3 - data OUT

SW4 output protocol.
For settings see page 9.

SW3 input protocol

SW3/1 – Output camera address
Off Camera address same as input camera address
ON Output camera address always 1
This can assist with some installations where existing domes/receivers are addressed as 1 therefore the dome/receiver doesn't need to be reconfigured.



2 - 3 Parity			4 - 5 Baud Rate			6 - 8 Protocol Selection			Input Protocol
SW3/2	SW3/3	Parity	SW3/4	SW3/5	Baud	SW3/6	SW3/7	SW3/8	
						off	off	off	BBV RS422 (TX1500/FBM) (fixed at 9600,N,8,1)
off	off	NONE	off	off	2400	off	off	**ON**	PELCO P
off	**ON**	EVEN	off	**ON**	4800				
ON	off	ODD	**ON**	off	9600				
ON	**ON**	NONE							
off	off	NONE	off	off	2400	off	**ON**	off	PELCO D
off	**ON**	EVEN	off	**ON**	4800				
ON	off	ODD	**ON**	off	9600				
ON	**ON**	NONE							
						off	**ON**	**ON**	VCL TP (fixed at 9600,N,8,1)
						ON	off	off	360 VISION (fixed at 9600,N,8,1)
			off	**ON**	4800	**ON**	off	**ON**	VICON (4800,N,8,1 or 9600,N,8,1)
			ON	off	9600				
						ON	**ON**	off	MOLYNX "D" TYPE TELEMETRY (fixed at 9600, E,8,1)
						ON	**ON**	**ON**	DENNARD (fixed at 9600,N,8,1)
SW3/2	SW3/3		SW3/4	SW3/5		SW3/6	SW3/7	SW3/8	
ON	**ON**		**ON**	**ON**		**ON**	**ON**	**ON**	Mark Mercer (fixed at 9600 N,8,1)

Fig 1 PCB Layout

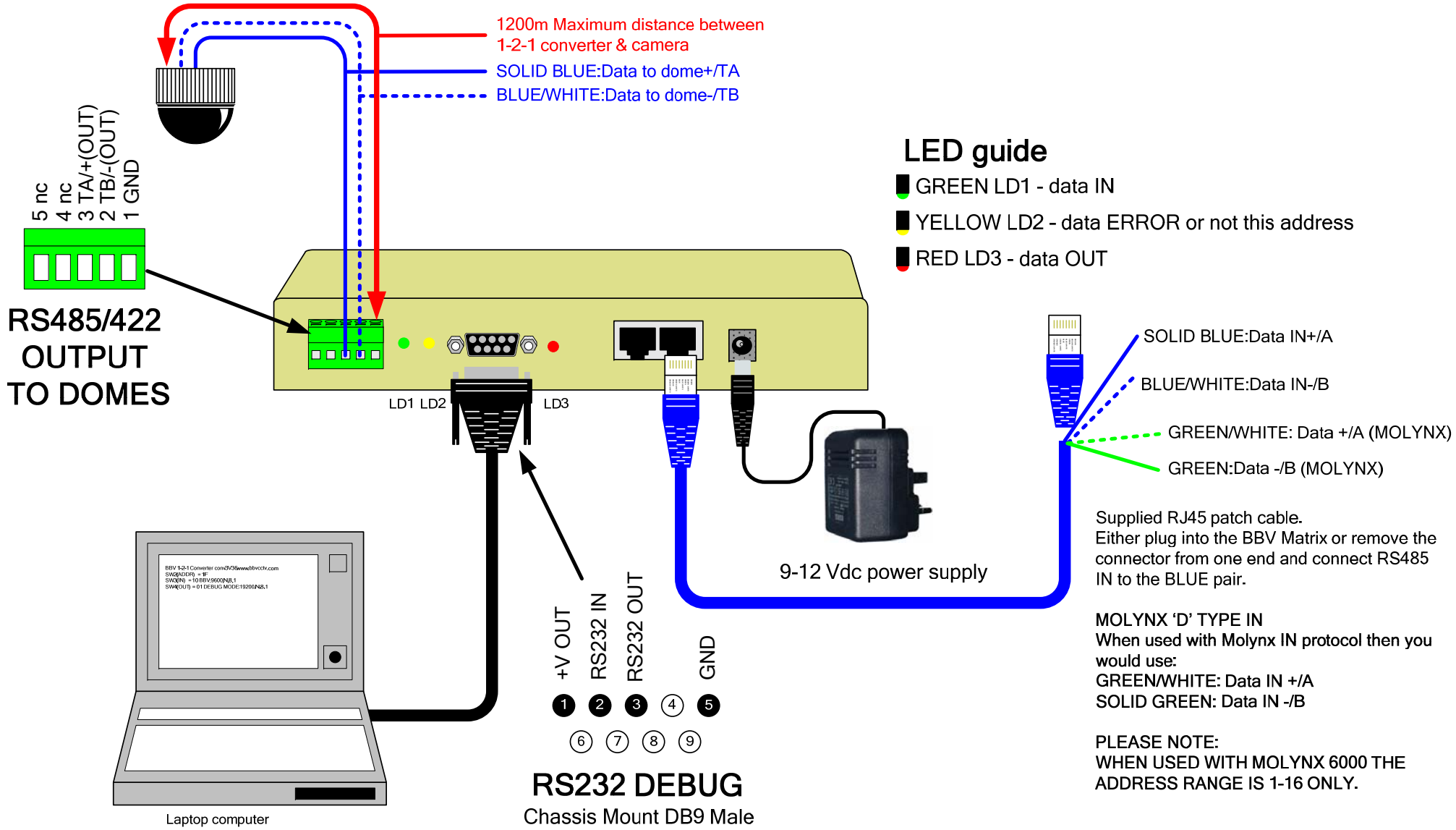


Fig 2 System Layout

Address numbering

Address numbering is limited to the number of addresses supported by the selected protocol; the maximum number of addresses that can be supported is 128. For example, a protocol that supports 256 addresses would support a maximum of 128 addresses when used with the BBV 1-2-1 converter.

Camera address selection SW2								
	1	2	4	8	16	32	64	128
Camera	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
1.	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2.	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
3.	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
4.	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
5.	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
6.	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
7.	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
8.	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
9.	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
10.	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
11.	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
12.	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
13.	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
14.	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
15.	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
16.	ON	ON	ON	ON	OFF	OFF	OFF	OFF
17.	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
18.	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
19.	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
20.	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
21.	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
22.	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
23.	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
24.	ON	ON	ON	OFF	ON	OFF	OFF	OFF
25.	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
26.	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
27.	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
28.	ON	ON	OFF	ON	ON	OFF	OFF	OFF
29.	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
30.	ON	OFF	ON	ON	ON	OFF	OFF	OFF
31.	OFF	ON	ON	ON	ON	OFF	OFF	OFF
32.	ON	ON	ON	ON	ON	OFF	OFF	OFF
33.	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
34.	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF
35.	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
36.	ON	ON	OFF	OFF	OFF	ON	OFF	OFF
37.	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF
38.	ON	OFF	ON	OFF	OFF	ON	OFF	OFF
39.	OFF	ON	ON	OFF	OFF	ON	OFF	OFF
40.	ON	ON	ON	OFF	OFF	ON	OFF	OFF
41.	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF
42.	ON	OFF	OFF	ON	OFF	ON	OFF	OFF
43.	OFF	ON	OFF	ON	OFF	ON	OFF	OFF
44.	ON	ON	OFF	ON	OFF	ON	OFF	OFF
45.	OFF	OFF	ON	ON	OFF	ON	OFF	OFF
46.	ON	OFF	ON	ON	OFF	ON	OFF	OFF
47.	OFF	ON	ON	ON	OFF	ON	OFF	OFF
48.	ON	ON	ON	ON	OFF	ON	OFF	OFF
49.	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF
50.	ON	OFF	OFF	OFF	ON	ON	OFF	OFF
51.	OFF	ON	OFF	OFF	ON	ON	OFF	OFF
52.	ON	ON	OFF	OFF	ON	ON	OFF	OFF
53.	OFF	OFF	ON	OFF	ON	ON	OFF	OFF
54.	ON	OFF	ON	OFF	ON	ON	OFF	OFF
55.	OFF	ON	ON	OFF	ON	ON	OFF	OFF
56.	ON	ON	ON	OFF	ON	ON	OFF	OFF
57.	OFF	OFF	OFF	ON	ON	ON	OFF	OFF
58.	ON	OFF	OFF	ON	ON	ON	OFF	OFF
59.	OFF	ON	OFF	ON	ON	ON	OFF	OFF
60.	ON	ON	OFF	ON	ON	ON	OFF	OFF
61.	OFF	OFF	ON	ON	ON	ON	OFF	OFF
62.	ON	OFF	ON	ON	ON	ON	OFF	OFF

63.	OFF	ON	ON	ON	ON	ON	OFF	OFF
64.	ON	ON	ON	ON	ON	ON	OFF	OFF
65.	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF
66.	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF
67.	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF
68.	ON	ON	OFF	OFF	OFF	OFF	ON	OFF
69.	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
70.	ON	OFF	ON	OFF	OFF	OFF	ON	OFF
71.	OFF	ON	ON	OFF	OFF	OFF	ON	OFF
72.	ON	ON	ON	OFF	OFF	OFF	ON	OFF
73.	OFF	OFF	OFF	ON	OFF	OFF	ON	OFF
74.	ON	OFF	OFF	ON	OFF	OFF	ON	OFF
75.	OFF	ON	OFF	ON	OFF	OFF	ON	OFF
76.	ON	ON	OFF	ON	OFF	OFF	ON	OFF
77.	OFF	OFF	ON	ON	OFF	OFF	ON	OFF
78.	ON	OFF	ON	ON	OFF	OFF	ON	OFF
79.	OFF	ON	ON	ON	OFF	OFF	ON	OFF
80.	ON	ON	ON	ON	OFF	OFF	ON	OFF
81.	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF
82.	ON	OFF	OFF	OFF	ON	OFF	ON	OFF
83.	OFF	ON	OFF	OFF	ON	OFF	ON	OFF
84.	ON	ON	OFF	OFF	ON	OFF	ON	OFF
85.	OFF	OFF	ON	OFF	ON	OFF	ON	OFF
86.	ON	OFF	ON	OFF	ON	OFF	ON	OFF
87.	OFF	ON	ON	OFF	ON	OFF	ON	OFF
88.	ON	ON	ON	OFF	ON	OFF	ON	OFF
89.	OFF	OFF	OFF	ON	ON	OFF	ON	OFF
90.	ON	OFF	OFF	ON	ON	OFF	ON	OFF
91.	OFF	ON	OFF	ON	ON	OFF	ON	OFF
92.	ON	ON	OFF	ON	ON	OFF	ON	OFF
93.	OFF	OFF	ON	ON	ON	OFF	ON	OFF
94.	ON	OFF	ON	ON	ON	OFF	ON	OFF
95.	OFF	ON	ON	ON	ON	OFF	ON	OFF
96.	ON	ON	ON	ON	ON	OFF	ON	OFF
97.	OFF	OFF	OFF	OFF	OFF	ON	ON	OFF
98.	ON	OFF	OFF	OFF	OFF	ON	ON	OFF
99.	OFF	ON	OFF	OFF	OFF	ON	ON	OFF
100.	ON	ON	OFF	OFF	OFF	ON	ON	OFF
101.	OFF	OFF	ON	OFF	OFF	ON	ON	OFF
102.	ON	OFF	ON	OFF	OFF	ON	ON	OFF
103.	OFF	ON	ON	OFF	OFF	ON	ON	OFF
104.	ON	ON	ON	OFF	OFF	ON	ON	OFF
105.	OFF	OFF	OFF	ON	OFF	ON	ON	OFF
106.	ON	OFF	OFF	ON	OFF	ON	ON	OFF
107.	OFF	ON	OFF	ON	OFF	ON	ON	OFF
108.	ON	ON	OFF	ON	OFF	ON	ON	OFF
109.	OFF	OFF	ON	ON	OFF	ON	ON	OFF
110.	ON	OFF	ON	ON	OFF	ON	ON	OFF
111.	OFF	ON	ON	ON	OFF	ON	ON	OFF
112.	ON	ON	ON	ON	OFF	ON	ON	OFF
113.	OFF	OFF	OFF	OFF	ON	ON	ON	OFF
114.	ON	OFF	OFF	OFF	ON	ON	ON	OFF
115.	OFF	ON	OFF	OFF	ON	ON	ON	OFF
116.	ON	ON	OFF	OFF	ON	ON	ON	OFF
117.	OFF	OFF	ON	OFF	ON	ON	ON	OFF
118.	ON	OFF	ON	OFF	ON	ON	ON	OFF
119.	OFF	ON	ON	OFF	ON	ON	ON	OFF
120.	ON	ON	ON	OFF	ON	ON	ON	OFF
121.	OFF	OFF	OFF	ON	ON	ON	ON	OFF
122.	ON	OFF	OFF	ON	ON	ON	ON	OFF
123.	OFF	ON	OFF	ON	ON	ON	ON	OFF
124.	ON	ON	OFF	ON	ON	ON	ON	OFF
125.	OFF	OFF	ON	ON	ON	ON	ON	OFF
126.	ON	OFF	ON	ON	ON	ON	ON	OFF
127.	OFF	ON	ON	ON	ON	ON	ON	OFF
128.	ON	ON	ON	ON	ON	ON	ON	OFF

SW4 (1 - 6) Output Protocol & Baud Selection for V41 software

PROTOCOL	BAUD	1	2	3	4	5	6	PAGE
1.SELF TEST	9600 N 8 1	off	off	off	Off	off	off	-
2.DEBUG MODE	**19200 N 8 1**	**ON**	off	off	Off	off	off	11
3.360 VISION	9600 N 8 1	off	ON	ON	ON	ON	off	14
4.BBV RS422	**9600 N 8 1**	**ON**	**ON**	**ON**	Off	off	off	15
6.CHUGAI SMD20	**9600 N 8 1**	**ON**	**ON**	**ON**	**ON**	**ON**	off	15
7.CHUGAI ZC- S122	9600 E 8 1	off	ON	off	ON	off	off	16
8.CONWAY	**9600 N 8 1**	**off**	**ON**	**off**	**ON**	**off**	**ON**	**17**
9.COP DOME (PELCO P/D)	2400/9600 N 8 1	off	ON	ON	off	off	ON	18
10.DENNARD 20xx series	**9600 N 8 1**	**off**	**ON**	**off**	**Off**	**off**	**off**	**18**
11. DM DTMF via TAD3 (Camera select sent every command)	9600 N 8 1	ON	off	ON	ON	off	ON	19
12. DM DTMF via TAD3 (Camera select only sent if camera number changed)	**9600 N 8 1**	**off**	**ON**	**ON**	**ON**	**off**	**ON**	**19**
13.FORWARD VISION	9600 O 8 1	ON	ON	ON	off	off	ON	20
14.JVC TK-C676	**9600 E 8 1**	**off**	**off**	**off**	**ON**	**off**	**off**	**22**
15.LG DOME (PELCO D) LPT-OI551HQ/OI553HQ	9600 N 8 1	ON	off	off	ON	off	ON	22
16.MARK MERCER	**9600 N 8 1**	**ON**	**ON**	off	Off	off	off	23
17.MEYERTECH VICTA	9600 N 8 1	ON	ON	off	off	off	ON	24
18.MOLYNX	**9600 E 8 1**	**ON**	**ON**	off	**ON**	off	off	25
19. NIO/DYNAPEL INTERCEPTER (Pelco D)	9600 N 8 1	off	off	off	off	ON	ON	26
20.PANASONIC 850	**9600 N 8 1**	**ON**	**off**	**ON**	**Off**	**off**	**off**	**27**
21.PANASONIC 850	19200 N 8 1	off	ON	ON	Off	off	off	
22.	**9600 N 8 1**	**off**	**off**	**ON**	**ON**	**off**	**off**	28
23.	9600 O 8 1	ON	off	ON	ON	off	off	
24.	**9600 E 8 1**	**off**	**ON**	**ON**	**ON**	**off**	**off**	
25.	4800 N 8 1	ON	ON	ON	ON	off	off	
26. PELCO P	**4800 O 8 1**	**off**	**off**	**off**	**Off**	**ON**	**off**	
27.	4800 E 8 1	ON	off	off	Off	ON	off	
28.	**2400 N 8 1**	**off**	**ON**	**off**	**Off**	**ON**	**off**	
29.	2400 O 8 1	ON	ON	off	Off	ON	off	
30.	**2400 E 8 1**	**off**	**off**	**ON**	**Off**	**ON**	**off**	
31.	9600 N 8 1	ON	off	ON	off	ON	off	
32.	**9600 O 8 1**	**off**	**ON**	**ON**	**off**	**ON**	**off**	
33.	9600 E 8 1	ON	ON	ON	off	ON	off	
34.	**4800 N 8 1**	**off**	**off**	**off**	**ON**	**ON**	**off**	
35. PELCO D	4800 O 8 1	ON	off	off	ON	ON	off	
36.	**4800 E 8 1**	**off**	**ON**	**off**	**ON**	**ON**	**off**	
37.	2400 N 8 1	ON	ON	off	ON	ON	off	
38.	**2400 O 8 1**	**off**	**off**	**ON**	**ON**	**ON**	**off**	
39.	2400 E 8 1	ON	off	ON	ON	ON	off	
40.PHILIPS RS232	**9600 N 8 1**	**off**	**off**	**ON**	**off**	**off**	**ON**	**29**
41.PHOTOSCAN	2400 E 8 1	off	off	off	ON	off	ON	30
42.SAMSUNG SCC641/643	**9600 N 8 1**	**off**	**ON**	**off**	**off**	**off**	**ON**	**31**
43.SENSORMATIC RS422	**4800 N 8 1**	**ON**	off	**ON**	off	off	**ON**	32

44.VCL	9600 N 8 1	off	off	ON	Off	off	off	34
45.VICON	**4800/9600 N 8 1**	**off**	**off**	**off**	**off**	**off**	**ON**	**35**
47.VIDECON VCP451	2400 N 8 1	off	off	ON	ON	off	ON	36
46.VIDECON VHSD860	**9600 N 8 1**	**ON**	**ON**	**off**	**ON**	**off**	**ON**	**37**
48.Videotec Ulisse(Pelco D)	9600 N 8 1	ON	ON	ON	ON	off	ON	38
49.VISTA POWERDOME	**9600 N 8 1**	**ON**	off	off	off	off	**ON**	39

FORMAT OF BAUD SETTINGS, BAUD RATE PARITY (NONE, EVEN, ODD) DATABITS STOPBITS

STOP AND READ BEFORE INSTALLING!

AS 3RD PARTY PROTOCOLS ARE NOT UNDER THE CONTROL OF BBV, WE CANNOT GUARANTEE THAT THIS UNIT WILL PROVIDE THE EXACT FUNCTIONALITY REQUIRED.

IT IS STRONGLY RECOMMENDED THAT OPERATION IS CONFIRMED DURING PRE BUILD TESTING BEFORE INSTALLING ON SITE.

PLEASE CONTACT OUR CUSTOMER SUPPORT DEPARTMENT IF YOU HAVE ANY QUESTIONS/ISSUES:

Tel: ++ 44 (0) 1323 444600
Email: support@bbvcctv.com

RS232 serial port

The DB9F connector provides the ability to use a laptop PC to monitor the data being sent out of the BBV 1-2-1 converter via RS232.

On power up or if SW2, SW3 or SW4 switches are altered the unit sends the current protocol, baud rate and parity settings. Please be aware that the laptop baud rate and parity must match the settings selected with SW4. If the settings do not match then the laptop display will have no meaning.

A power up message example is shown below:

BBV 1-2-1 converter conv3V39
www.bbvcctv.com
SW2(ADDR) = 01
SW3(IN) = 10 BBV:9600,N,8,1
SW4(OUT) = A3 MARK MERCER V7.3:9600,N,8,1

A debug mode can also be selected which provides detailed information for each command received. Whilst trouble shooting BBV engineers may ask you to use this mode with a laptop or other PC:

BBV 1-2-1 converter conv3V39
www.bbvcctv.com
SW2(ADDR) = 01
SW3(IN) = 10 BBV:9600,N,8,1
SW4 (OUT) = 01 DEBUG MODE:19200,N,8,1

CAM=00 W3=00 W4=14 W5=40 W6=24 PL 064TD 036
CAM=00 W3=00 W4=14 W5=06 W6=3C PL 006TD 060
CAM=00 W3=00 W4=12 W5=2E W6=38 PR 046TD 056
CAM=00 W3=00 W4=12 W5=40 W6=08 PR 064TD 008
CAM=00 W3=00 W4=08 W5=00 W6=0C TU 012
CAM=00 W3=00 W4=04 W5=40 W6=00 PL 064
CAM=00 W3=00 W4=14 W5=32 W6=34 PL 050TD 052
CAM=00 W3=00 W4=12 W5=2A W6=38 PR 042TD 056
CAM=00 W3=00 W4=04 W5=36 W6=00 PL 054
CAM=00 W3=00 W4=00 W5=00 W6=00 Cam 00 stop

The example above shows the debug output for Camera 1. Driving pan/tilt followed by a stop command.

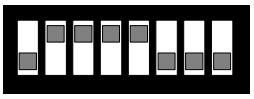
The following table shows the possible input and output protocols that are supported with this version of software.

Output Protocol	***Input Protocol***								
	BBV TX1500 FBM	*PELCO D/P*	*VCL*	*360 VISION*	*VICON*	*MARK MERCER*	*MOLYNX **USE GREEN PAIR***	*DENNARD*	*Page*
360 VISION	X	X	X						13
BBV RS422	X	X				X	X	X	15
Chugai SMD20	X	X							15
Chugai ZCS122/123	X	X							16
CONWAY DOME	X	X							17
COP (PELCO D)	X	X							18
DENNARD 2050	X	X				X	X	X	18
DM DTMF VIA TAD3	X	X							19
FORWARD VISION	X	X							20-21
JVC TKC676	X	X				X	X	X	22
LG DOME PELCO D	X	X							22
MARK MERCER	X	X			X	X	X	X	23
MEYERTECH VICTA	X	X							24
MOLYNX 250/260	X	X							25
NIO D86 INTERCEPTER	X	X							26
PANASONIC CS850/860	X	X				X	X	X	27
PELCO D/P	X	X				X	X	X	28
PHILIPS RS232	X	X				X	X	X	29
PHOTOSCAN	X	X							30
SAMSUNG SCC641/643	X	X							31
SENSORMATIC RS422	X	X				X	X	X	32
VCL TP	X	X		X		X	X	X	33-34
VICON	X	X				X	X	X	34
VIDECON VCP451	X	X							36
VIDECON VHSD 860	X	X				X	X	X	37
VIDEOTEC ULISSE	X	X							38
VISTA POWERDOME	X	X				X	X	X	39

Please note the limited 1-16 camera range using Molynx input when used with Molynx 6000 controller. 1-128 when using Visilynx.

Protocol specific information

SW4



360 VISION from BBV

Connect dome D+ to BBV 1-2-1 converter TA
and dome D- to BBV 1-2-1 converter TB.
Set the dome address using the DIL switch to match the number of the camera input of the TX1500.

Ensure that the dome at the end of a daisy chained RS485 run has the RS485 terminated and the intermediate domes have the RS485 de-terminated.

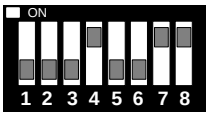
The following functionality is provided:
Manual pan/tilt control with 16 speed steps from 1 to 127, (slowest to fastest)
Zoom with Manual Iris and Focus override.
Operating the Zoom will re-enable auto focus and iris after manual adjustment
32 preset positions.
2 sequential preset tours of preset positions 1 - 16, tour 1 high speed and tour 2 slow speed. The dwell time is fixed at 10 seconds per preset position. Preset positions can be removed from the tours.
All 32 privacy zones can be programmed and disabled if required.

Advanced Function	**TX1500 Procedure**
180 degree pan flip (U turn)	**1 #**
Program a privacy zone	**2 #** followed by **PROGRAM 1-32 PRESET**
Clear a privacy zone	**3 #** followed by **PROGRAM 1-32 PRESET**
Add preset position to the tours	Programming a preset position adds the preset into the tour. (1 – 16 only)
Remove a preset from the tours	**PROGRAM 50 PRESET** followed by **1-16 PRESET**
Start preset tour 1 – high speed	**1 PATROL** (max speed with 10 second dwell)
Start preset tour 2 – slow speed	**2 PATROL** (speed 32 with 10 second dwell)
Set autoflip mode	**PROGRAM 51 PRESET** followed by **1 PRESET** = autoflip OFF **2 PRESET** = ON tilt at down limit **3 PRESET** = ON when at limit
Set Video Gain/Lift and Sync timing	**PROGRAM 52 PRESET** followed by **IRIS CLOSE/OPEN** to increase/decrease GAIN **FOCUS NEAR/FAR** to increase/decrease LIFT **ZOOM IN/OUT** to advance/retard timing Move joystick when finished.
Set IR Filter mode	**PROGRAM 53 PRESET** followed by **1 PRESET** = mono mode/auto off **2 PRESET** = colour mode/auto off **3 PRESET** = auto/kill colour **4 PRESET** = auto/don't kill colour
Set Home functions (Revised in V16 software)	**PROGRAM 54 PRESET** followed by **1-5 PRESET** = Function (1=enable,2=disable,3=preset 1,4=tour1,5=mimic 1) **1-60 PRESET = timeout in minutes**
Unit Reset. This simulates powering the dome off/on	**PROGRAM 55 PRESET** followed by **PROGRAM 55 PRESET**
Preset Tour Definition Example to program tour 1 Step 1 – define tour. PROGRAM 56 PRESET Step 2 – tour 1 or 2. 1 PRESET Step 3 – 4 presets for each preset point 1 PRESET (point 1) 1 PRESET (PRESET 1) 64 PRESET (max speed) 10 PRESET (10 seconds dwell)	**PROGRAM 56 PRESET (start definition)** **1 or 2 PRESET – Tour number** **1 – 64 PRESET (tour point number)** **1 – 32 PRESET (preset number)** **1 – 64 PRESET (speed)** **1 – 64 PRESET (dwell in seconds** **repeated for each point apart from last**

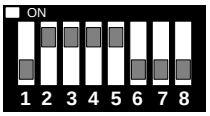
Repeat step 3 for each point until the last point Step 4 – last tour point. PROGRAM 57 PRESET 3 PRESET (point 3) 4 PRESET (PRESET 4) 32 PRESET (middle speed) 2 PRESET (2 seconds dwell) The tour is now defined	**PROGRAM 57 PRESET (last point)** **1 – 64 PRESET (tour point number)** **1 – 32 PRESET (preset number)** **1 – 64 PRESET (speed)** **1 – 64 PRESET (dwell in seconds**
Mimic Tour Definition (AUTOPAN will replay the mimic tour)	**PROGRAM 58 PRESET (start definition)** **Use joystick and zoon to move dome around required tour.** **PROGRAM 59 PRESET (end definition)**
Fast Shutter ON (ANPR mode)	**PROGRAM 60 PRESET**
Fast Shutter OFF (normal mode)	**PROGRAM 61 PRESET**

360 VISION from VCL telemetry

SW3



SW4



Connect dome
D+ to 1-2-1 BBV Converter TA and dome
D- to 1-2-1 BBV Converter TB.

Set the dome address using the DIL switch to match the number of the camera input of the TX1500. Ensure that the dome at the end of a daisy chained RS485 run has the RS485 terminated and the intermediate domes have the RS485 de-terminated.

The following functionality is provided:
Manual pan/tilt control with 16 speed steps from 1 to 127 (slowest to fastest)
Zoom with Manual Iris and Focus override.
Operating the Zoom will re-enable auto focus and iris after manual adjustment
32 preset positions.
Preset 100 – 127 will program the dome privacy zone 1 – 27. These can be disabled within the VCL privacy menu by setting the appropriate preset to PRESET. The dome will move to show the privacy scene to allow toggling the privacy back on by selecting PRIVATE.
Tour definitions are compatible with the VCL programming method 2 including dwell time and speed per tour point.
The dome home feature can be programmed using the standard VCL control menu.

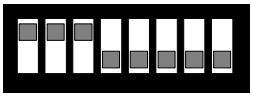
In addition to the standard functions offered by the VCL control system the following features are available:

Set autoflip mode	program preset 51 followed by goto preset 1 = autoflip OFF goto preset 2 = ON tilt at down limit goto preset 3 = ON when at limit
Set Video Gain/Lift and Sync timing	program preset 52 followed by iris close/open to increase/decrease GAIN focus near/far to increase/decrease LIFT zoom in/out to advance/retard timing Move joystick when finished.
Set IR Filter mode	program preset 53 followed by goto preset 1 = mono mode/auto off goto preset 2 = colour mode/auto off goto preset 3 = auto/kill colour goto preset 4 = auto/don't kill colour
Set Home functions (fixed at 5 minutes)	program preset 54 followed by goto preset 1 = Enable to preset 1 goto preset 2 = Enable to patrol 1 (fast) goto preset 3 = Enable to patrol 2 (slow) goto preset 4 = Disable home
Unit Reset.	program preset 55 twice

BBV 422 (9600, N, 8, 1) (adjust SW3 to suit input protocol)

Connect twisted pair as follows:-
RA + to BBV 1-2-1 convert TA.
RA – to BBV 1-2-1 convert TB.

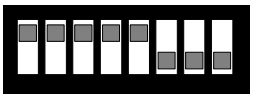
SW4



BBV Function	Molynx	Pelco & Mark Mercer Procedure
#1	Cam on then Goto Preset 1	Go to Preset 61
#2	Cam on then Goto Preset 2	Go to Preset 62
#3	Cam on then Goto Preset 3	Go to Preset 63
#4	Cam on then Goto Preset 4	Go to Preset 64
Patrol 1	Cam on then Goto Preset 5	Go to Preset 66
Patrol 2	Cam on then Goto Preset 6	Go to Preset 67
Autopan	Cam on then Goto Preset 7	Go to Preset 68

Chugai SMD20, STAR MD2000, SANYO VCC9200P from BBV and Pelco D/P telemetry.

SW4



Connect dome
DATA+ to BBV 1-2-1 Converter TA and dome
DATA- to BBV 1-2-1 Converter TB.
Set the dome address using the DIL switch to match the number of the camera input of the TX1500.

Ensure that the dome at the end of a daisy chained RS485 run has the RS485 terminated and the intermediate domes have the RS485 de-terminated.

This type of dome can be addressed from 1 – 31. To allow use of more that 31 domes on a TX1500 system the 1-2-1 converter can be adjusted to select banks of cameras as follows:

Camera Range	SW4/7	SW4/8
1 - 31	OFF	OFF (Default setting)
32 - 62	ON	OFF
63 - 93	OFF	ON
94 - 124	ON	ON

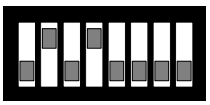
When the 1-2-1 converter is set for camera range 32 – 62, the dome connected into video input 32 must have the address set for 1 and video input 33 must have the address set to 2 etc up to video input 62 with the address set to 31.

i). Timing to the dome is critical, due to the nature of the dome protocol (half duplex command and response commands). The dome will ignore any command sent before it has finished executing the previous command; for example, a goto preset command sent whilst the dome is searching for another preset, (e.g. multiple alarm occurrences in quick succession).
ii) Supported manual PTZ with manual focus which reverts back to auto focus on a pan/tilt or zoom.
iii) 64 preset positions are supported
iv) The AUTOPAN key is used to start patrol 2.
v) 2 preset patrols are provided and the preset positions in each patrol are programmable. Patrol 1 has a fixed full speed movement to each preset and a dwell of 10 seconds. To define patrol 1, first PROGRAM 65 PRESET, followed by GOTO preset for each of the presets to be patrolled. Up to 64 presets can be programmed. Each preset position must be programmed prior to defining the patrol. To end the definition PROGRAM 66 PRESET.
Patrol 2 has a fixed slow speed movement between preset positions and a 10 second dwell at each position. Programming is similar to Patrol 1. PROGRAM 67 PRESET to start definition, goto preset … followed by PROGRAM 68 PRESET to end the definition. Patrol 2 can also be started by pressing the AUTOPAN key.
vi) LEDS, LD2 flashes when commands are received for domes that lie outside of the 31 camera range set by SW2, SW4/7 and SW4/8.

IMPORTANT: THE DOME WILL IGNORE ALL COMMANDS SENT FROM THE 1-2-1 CONVERTER WHEN IT IS MOVING TO A PRESET POSITION UNTIL THE PRESET POSITION HAS BEEN REACHED. THIS RELATES TO MANUAL PRESET OR DURING A PATROL.

Chugai/Ganz ZC-S122/123 – Fixed at 9600,E,8,1 from BBV and Pelco D/P telemetry only

SW4



Function	TX1500 Procedure	Pelco Procedure
Menu ON/OFF	**1 #**	Go to Preset 61
SET (whilst in menu)	**2 #**	Go to Preset 62
CLR (whilst in menu)	**3 #**	Go to Preset 63
PRESET SEQUENCE	1 PATROL	Go to Preset 66
PLAYBACK TRACE	2 PATROL	Go to Preset 67
AUTOPAN	AUTOPAN	Go to Preset 68
AUX 1 OUTPUT ON/OFF	LIGHTS	1 AUX
AUX 2 OUTPUT ON/OFF	WIPER	2 AUX

Notes:
Connect dome A/+ (pin 1, BROWN) to the BBV 1-2-1 converter TA and dome B/- to the BBV 1-2-1 converter TB.
Each dome must be set to 9600 Baud with switch 5 OFF, switch 6 ON. Set the dome address using the dome rotary switches to match the number of the camera input of the TX1500. Ensure that domes at the end of the RS485 run are terminated by turning switch 8 ON and the intermediate domes have the switch 8 OFF.

A total of up to 96 domes are supported with a maximum of 32 domes per star output.

Menu access:
Press 1# will toggle the Menu display ON/OFF.
Whilst the menu is displayed the joystick is used to navigate.
2# is used as SET to access a menu option and
3# is used as CLR to go back.

Addition functions are available for the currently displayed dome:
AUTOPAN is started by pressing the AUTOPAN key.
PRESET SEQUENCE is started by pressing 1 PATROL.
TRACE playback is started by preceding 2 PATROL

The protocol 1-2-1 converter can directly access preset 1 – 64 by pressing the preset number followed by the PRESET key.

To program a preset position, press PROGRAM followed by the preset number and the PRESET key. See the TX1500 manual for detailed information.

CONWAY dome from BBV and Pelco D/P telemetry only

SW4

Connect the twisted pair as follows:
Dome A to BBV 1-2-1 converter TB
Dome B to BBV 1-2-1 converter TA

The following functionality is provided:
Variable speed Pan/Tilt
Zoom/Focus/Iris
64 preset positions
Preset tour 1 & 2 playback only
Wash/WIPE/LIGHTS (IR Filer ON/OFF)
Privacy enable, disable

Additional dome features

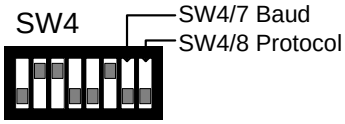
Dome Function	**Tx1000 Keystroke**	**TX1500 Keystroke**	**Pelco Procedure**
ENABLE PRIVACY	hold # and tap **WASH**	2 #	Go to Preset 62
DISABLE PRIAVCY	hold # and tap **AUTOPAN**	3 #	Go to Preset 63
TOUR 1 PLAYBACK	hold **PATROL** and tap **1**	1 PATROL	Go to Preset 66
TOUR 2 PLAYBACK	hold **PATROL** and tap **2**	2 PATROL	Go to Preset 67
IR CUT FILTER ON/OFF	LIGHTS ON/OFF	LIGHTS ON/OFF	1 AUX

Note:
The Data connections A/B are crossed when using this dome so please connect the dome A to green connector TB and dome B to green connector TA.

Preset tours programming is NOT supported. These must be defined first using a CONWAY controller.

For more information please refer to the dome handbook.

COP PELCO D or PELCO P from BBV and Pelco D/P telemetry only



Connect the twisted pair as follows:
dome RS485+ (ORANGE) to BBV 1-2-1 converter TA
dome RS485- (YELLOW) to BBV 1-2-1 converter TB

Baud Rate	SW4/7
2400	OFF (default)
9600	ON
Protocol	SW4/8
PELCO D	OFF (default)
PELCO P	ON

Set the dome for protocol and baud rate. The default is 2400 baud and Pelco D telemetry.
Set the dome address to match the number of the camera input of the matrix.

The following functionality is provided:
Variable speed Pan/Tilt
Zoom/Focus/Iris
63 preset positions.
Menu access and navigation
Pattern record and playback+
Preset patrol 1 and 2 playback

Additional Dome features

Dome Function	TX1000 Keystroke	TX1500 Keystroke	Pelco Procedure
DISPLAY DOME MENU	hold # and tap **WASH** and navigate using the joystick and IRIS keys	**1** # and navigate using the joystick and IRIS keys	Go to Preset 61
PATTERN RECORD START	hold # and tap **AUTOPAN** then use joystick to move dome around required scenes.	**3** # then use joystick to move dome around the required scenes.	Go to Preset 63
PATTERN RECORD STOP	hold # and tap **LIGHTS**	**4** #	Go to Preset 64
PATTERN PLAYBACK	**AUTOPAN**	**AUTOPAN**	Go to Preset 68
PATROL 1 PLAYBACK	hold **PATROL** and tap **1**	**1 PATROL**	Go to Preset 66
PATROL 2 PLAYBACK	hold **PATROL** and tap **2**	**2 PATROL**	Go to Preset 67

DENNARD 20xx – Fixed at 9600,N,8,1 (adjust SW3 to suit input protocol)

Connect the twisted pair as follows:
dome RS485+ (YELLOW) to BBV 1-2-1 converter TA
dome RS485- (GREEN) to BBV 1-2-1 converter TB

To enter when in menu send a **'GOTO PRESET 1'**

Function	TX1500 Procedure	Pelco & Mark Mercer Procedure	Molynx
Display Dome Menu	**1** #	Go to Preset 61	Cam on then Prog preset 1
Display User Menu	**2** #	Go to Preset 62	Cam on then Prog preset 2
Display Technicians Menu	**3** #	Go to Preset 63	Cam on then Prog preset 3
Start current dome's Sequence 001	**1 PATROL**	Go to Preset 66	Cam on then Goto preset 5
Start ALL DOMES Sequence 001	**2 PATROL**	Go to Preset 67	Cam on then Goto preset 6

Navigate through the dome menu using pan/tilt and issue GOTO PRESET 1 to select current line.

DM DTMF RECEIVERS USING TAD3 from BBV and Pelco D/P telemetry only.

SW4

SEND CAMERA SELECTS BEFORE EVERY MOVEMENT COMMAND (useful for noisy links to ensure that the correct camera is controlled although this provides increased control delay)

- OR -

SW4

ONLY SEND CAMERA SELECT WHEN CAMERA CHANGES
(This is the normal method and gives improved control for most applications)

Notes
The DM TAD3 must be sourced from DM and fitted with special software TTT1_0 in IC3 position and ensure that the following configuration links are fitted. If the link is multi pins then only fit links that are shown and not fitted if not shown

J2/5-6 J4/1-2 J5/2-3 J6/2-3 J7/1-2 J9 – fitted

Connect from the

1-2-1 CONVERTER	TAD3 CBUS DIN SOCKET
TA	pin 2
TB	pin 1
GROUND	pin 3

DTMF from the TAD3 to DTMF receivers use the TONE or AUDIO connector as required.

In addition to the normal manual pan/tilt/zoom commands the following are also supported.
WASH = AUX 1
WIPER = AUX 2
LIGHTS = AUX 3

AUTOPAN = *858001 START, *858000 STOP
PATROL = *854001 START, *854000 STOP

FORWARD VISION MIC-1300/400 from BBV and Pelco D/P telemetry only

SW4

Connect the twisted pair as follows:
Dome RX A (YELLOW) to BBV 1-2-1 converter TB (A & B swapped)
Dome RX B (WHITE) to BBV 1-2-1 converter TA

Set the dome address to match the number of the camera input of the matrix.

The following functionality is provided:
Variable speed Pan/Tilt
Zoom/Focus/Iris
64 preset positions.
Patrol (sequence) record. 8 positions of presets 1 – 16
Autopan

Additional dome features

Dome Function	**TX1000 Keystroke**	**TX1500 Keystroke**	**Pelco Procedure**
SPECIAL PROGRAMMING (see below)	hold # and tap **WASH**	1 #	Go to Preset 61
DIGITAL ZOOM ON/OFF	hold # and tap **WIPE**	2 #.	Go to Preset 62
MANUAL/AUTO EXPOSURE	hold # and tap **AUTOPAN**	3 #	Go to Preset 63
IR FILTER IN/OUT	hold # and tap **LIGHTS**	4 #	Go to Preset 64
ENABLE ALL SCENE	Hold # and tap **WASH**, **PROGRAM 1**, **1**	1 # PROGRAM 1 PRESET	Go to Preset 61, Program 1 Preset
DISABLE ALL SCENE	Hold # and tap **WASH**, **PROGRAM 1**, **2**	1 # PROGRAM 2 PRESET	Go to Preset 61, Program 2 Preset
TOGGLE CURSOR ON/OFF	Hold # and tap **WASH**, **PROGRAM 1**, **3**	1 # PROGRAM 3 PRESET	Go to Preset 61, Program 3 Preset
ENABLE AROUND CURSOR	Hold # and tap **WASH**, **PROGRAM 1**, **4**	1 # PROGRAM 4 PRESET	Go to Preset 61, Program 4 Preset
DISABLE AROUND CURSOR	Hold # and tap **WASH**, **PROGRAM 1**, **5**	1 # PROGRAM 5 PRESET	Go to Preset 61, Program 5 Preset

PROGRAM PRESET PATROL
The 1-2-1 CONVERTER supports a single preset patrol per dome with a programmable dwell time and up to 8 preset positions. Please ensure that you program the preset positions first using the normal procedure. The keystrokes used will depend on the controller used. The TX1000 and TX1500 procedures are shown below.

TX1000
a. Hold # and tap **WASH**, then Hold **PATROL** and tap **1** (patrol programming mode)
b. Hold **PRESET** and tap **1** – **16** (dwell time 1 – 16 seconds)
c. Hold **PRESET** and tap **1** – **16** (first preset position)
d. repeat step C for up to 8 preset positions total
e. Hold **PATROL** and tap **1** (save the dome patrol)

TX1500
a. **1 #** then **1 PATROL** (patrol programming mode)
b. **1** – **64 PRESET** (dwell time 1 – 64 seconds)
c. **1** – **64 PRESET** (first preset position)
d. repeat step C for up to 8 preset positions in total
e. **1 PATROL** (save the dome patrol)

Pelco
a. **61 Preset** then **66 Preset** (patrol programming mode)
b. **1** – **64 PRESET** (dwell time 1 – 64 seconds)
c. **1** – **64 PRESET** (first preset position)
d. repeat step C for up to 8 preset positions in total
e. **66 Preset** (save the dome patrol)

Continued on page 21

In addition, the following dome features are supported. First either 1# from TX1500 or Hold # and tap WASH then program the following presets:

FUNCTION	**PROGRAM PRESET**
PAN REVERSE ON/OFF (PRESET 194/195)	6 ON, 7 OFF
AUTO IR ON/OFF (PRESET 196/197)	8 ON, 9 OFF
INTERMITANT WIPE ON/OFF (PRESET 198/199)	10 ON, 11 OFF
SOFTLIMIT TOP LEFT (PRESET 200)	12
SOFTLIMIT BOTTOM RIGHT (PRESET 201)	13
NONE DWELL TOP LEFT (PRESET 202)	14
NONE DWELL BOTTOM RIGHT (PRESET 203)	15
AUTOHOME PRESET 1 (PRESET 204)	16
AUTOHOME SEQUENCE (PATROL) (PRESET 205)	17
AUTOHOME OFF (PRESET 206)	18
MULTI ALARM ON/OFF (PRESET 207/208)	19 ON, 20 OFF
DIGITAL ZOOM ENABLE/DISABLE (PRESET 209/210)	21 ON, 22 OFF
SET TOUR1,2,3,4,5,6 (PRESET 211-216)	23 – 28
AUTOFLIP ON/OFF (PRESET 217/218)	29 ON, 30 OFF
WASHWIPE ON/OFF (PRESET 219/220)	31 ON, 32 OFF
PRIVACY SET CURSOR (PRESET 221)	33
PRIVACY INIT PARAMETER (PRESET 222)	34
PRIVACY LOAD PARAMETER (PRESET 223)	35
PRIVACY SAVE PARAMETER (PRESET 224)	36
PRIVACY HIDE CURSOR (PRESET 225)	37
PRIVACY SHOW CURSOR (PRESET 226)	38
PRIVACY CLEAR CENTRAL (PRESET 227)	39
PRIVACY SET CENTRAL (PRESET 228)	40
PRIVACY SET STYLE (PRESET 229)	41
PRIVACY HIDE STYLE (PRESET 230)	42
PRIVACY SHOW STYLE (PRESET 231)	43
PRIVACY REPLACE ALL (PRESET 232)	44
PRIVACY UNCOVER ALL (PRESET 233)	45
PRIVACY CLEAR WHOLE (PRESET 234)	46
PRIVACY SET WHOLE (PRESET 235)	47
AUTO ALARM ON/OFF (PRESET 236/237)	48 ON, 49 OFF
AUTO LOWLIGHT ON/OFF (PRESET 238/239)	50 ON, 51 OFF)
CAMERA RECALIBRATE (PRESET 251)	52
RESET PRESETS (PRESET 255)	53

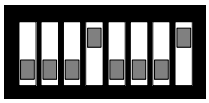
As the TX1000 supports up to preset 16 all commands that require preset 17 and higher can't be accessed. A TX1500 must be used in this case.

For example to enable auto IR use the following keystrokes
TX1000
Hold # and tap WASH (extended dome command mode)
PROGRAM 1 then 8 (program preset 8)

TX1500
1 # (extended dome command mode)
PROGRAM 8 PRESET (program preset 8)

JVC TK-C676 – Fixed at 9600,E,8,1

SW4



Function	TX1500 Procedure	Pelco & Mark Mercer Procedure	Molynx
Display menu and EXIT	**1 #**	SAVE PRESET 95	Cam on then Prog preset 1
SET (whilst in menu)	**2 #**	GOTO PRESET 33	Cam on then Prog preset 2
Toggle Extended Dynamic Range	**3 #**	GOTO PRESET 94	Cam on then Prog preset 3
Cycle BW mode, ON/OFF/AUTO	**4 #**	GOTO PRESET 64	Cam on then Prog preset 4
Start dome AUTO PATROL	**1 PATROL**	GOTO PRESET 97	Cam on then Goto preset 5
As above for ALL DOMES	**2 PATROL**	GOTO PRESET 98	Cam on then Goto preset 6
Start dome AUTOPAN	**AUTOPAN**	GOTO PRESET 99	Cam on then Goto Preset 7
Force AUTOFOCUS after zoom	**SW4/7 ON will force the dome to AUTOFOCUS after a zoom stop command. This is useful when used with 675BE domes.**		

Notes:
Connect dome RX- to the BBV 1-2-1 converter TB and dome RX+ to the BBV 1-2-1 converter TA.
Each dome must be set to Multi-drop, Simplex mode by setting dome switch 4 & 5 ON. Set each dome address using the dome rotary switches. This address must match the number of the camera input of the telemetry controller.

To display the current dome's menu, press either 1# with the BBV TX1500 or SAVE PRESET 95 using Pelco-P or Pelco-D protocol. Use standard PAN/TILT and where required ZOOM to navigate through the menus. To simulate the SET key to navigate into sub-menus press 2# with a TX1500 or GOTO PRESET 33 when using Pelco protocols. To exit the current menu press 1# for the TX1500 or SAVE PRESET 95 with Pelco.

Addition functions.
Pressing AUTOPAN with a TX1500 or GOTO PRESET 99 with Pelco will cause the current dome to start an AUTOPAN.
Pressing 1 PATROL with a TX1500 or GOTO PRESET 97 with Pelco will cause the current dome to start an AUTOPATROL.
Pressing 2 PATROL with a TX1500 or GOTO PRESET 98 with Pelco will cause ALL the domes to start an AUTOPATROL.

Extended Dynamic Range can be toggled ON/OFF using 3# with the TX1500 or GOTO PRESET 94 with Pelco.
B/W Mode can be cycled between ON/OFF/AUTO using 4# with the TX1500.
Above functions also available with Molynx (see table)

Camera mode display. Protocol 1-2-1 converter SW4/8
If protocol 1-2-1 converter switch SW4/8 is set to ON then each time the Extended Dynamic Range or BW mode is changed or AUTOPATROL is selected then the dome title is altered to display these settings. If it is preferred to use the dome camera title for titling then set switch SW4/8 OFF. The settings will still be changed but will not be shown.

Presets
The dome home preset position is preset 0. As most control systems do not directly support preset 0, preset 1 is used instead. This means that in practice, preset 1 is home, preset 2-32 are preset 2-32 and the dome's preset 1 is not used. This could only be an issue when programming alarms directly into the dome. Do not use preset position 1 unless this is programmed from within the dome menu.

LG DOME (PELCO D) from BBV and Pelco D/P telemetry only.

SW4

Connect the twisted pair as follows:
Dome TRX D+ (RED) to BBV 1-2-1 converter TA
Dome TRX D- (GREEN) to BBV 1-2-1 converter TB

Dome SW301 – 1 OFF, 2 ON, 3 ON, 4 OFF (Selects Pelco D)
Dome SW304 – ALL OFF (9600 baud)
Dome SW302 – Address – set to match the matrix camera input

The following functionality is provided:
Variable speed Pan/Tilt
Zoom/Focus/Iris
64 preset positions
Menu access and navigation
Pattern record and playback
Preset patrol 1

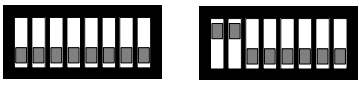
Additional Dome features

Dome Function	**TX1000 Keystroke**	**TX1500 Keystroke**	**Pelco Procedure**
DISPLAY DOME MENU	hold # and tap **WASH** and navigate using the ZOOM and FOCUS keys	**1 #** and navigate using the ZOOM and FOCUS keys	Go to Preset 61
180 DEGREE PAN FLIP	hold # and tap **WIPE**	**2 #**	Go to Preset 62
PATTERN RECORD START	hold # and tap **AUTOPAN** then use joystick to move dome around required scenes.	**3 #** then use joystick to move dome around the required scenes.	Go to Preset 63
PATTERN RECORD STOP	hold # and tap **LIGHTS**	**4 #**	Go to Preset 64
PATTERN PLAYBACK	**AUTOPAN**	**AUTOPAN**	Go to Preset 68
PATROL 1 PLAYBACK	hold **PATROL** and tap **1**	**1 PATROL**	Go to Preset 66

Note:
When navigating the dome menu ZOOM IN moves the cursor UP and ZOOM OUT moved the cursor DOWN. The FOCUS keys are used to ENTER and change values.

For more information please refer to the dome handbook.

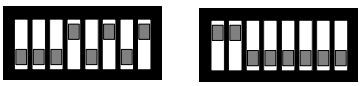
SW3 SW4



MARK MERCER (adjust SW3 to suit input protocol)

Function	**TX1500 Procedure**	**Pelco Procedure**	**Molynx**
180 Pan U turn	**1 # or WASH**	Go to Preset 61	Cam on then Prog preset 1
Start current dome's patrol	**1 PATROL**	Go to Preset 66	Cam on then Goto preset 5
Start ALL DOMES patrol	**2 PATROL**	Go to Preset 67	Cam on then Goto preset 6

SW3 SW4



MARK MERCER from VICON

When used with VICON protocol the Mark Mercer protocols supports 79 preset positions. Preset 80-89 will cause the dome preset patrol 1 to start. The patrol cannot be changed once preset positions have been saved.
The VICON protocol baud rate can be set from 2400, 4800, 9600 and 19200 using SW3/4 and SW3/5 as the previous diagram.

Meyertech ZVR-510 receiver with VICTA protocol from BBV and Pelco D/P telemetry only.

SW4

Connect receiver 422 RX+ to BBV 1-2-1 converter TA and 422 RX- to BBV 1-2-1 converter TB.
Set the receiver address to match the number of the camera input of the matrix.

The following functionality is provided.
Variable speed Pan/Tilt – 8 speeds
Zoom/Focus
WASH, WIPE, LIGHTS auxiliary outputs
32 preset positions.
Menu access and navigation

The Meyertech protocol supports 8 speeds for pan and tilt. If the head is to pan and tilt simultaneously then the same speed is used for both axis. For example if the head is moving left at say speed 4 and then the joystick is moved up the head will now move left at the new tilt speed. This is not a problem with the 1-2-1 converter but a limitation of the Meyertech protocol.

Receiver Menu Access and navigation.

Receiver Function	**TX1500 Keystroke**	**Pelco Procedure**
RECEIVER MENU ON Once the receiver menu is displayed the joystick is used to navigate the cursor.	**1 #**	Go to Preset 61
MENU ENTER Select the flashing item	**2 #**	Go to Preset 62
MENU TOGGLE ITEM Used to cycle options displayed in [ ] brackets.	**3 #**	Go to Preset 63
EXIT MENU MODE – ALLOW PTZ This must be sent when the menu has been exited to allow normal pan/tilt control with the joystick.	**4 #**	Go to Preset 64
ENTER NUMBERS 0 – 9	**1 – 9 PRESET = number 1 – 9** **10 PRESET = number 0**	1 – 9 PRESET = number 1 – 9 10 PRESET = number 0
AUX A1 ON/OFF	**GOTO PRESET 81 /** **GOTO PRESET 82**	1 AUX ON/OFF

SW4

Molynx protocol – Fixed at 9600,E,8,1 Control from BBV and Pelco D/P protocol only

Function	TX1500 Procedure	Pelco Procedure
PRESET 1 – 32	As manual	As manual
WASH, WIPE, LIGHTS	As manual	As manual
TOGGLE MENU ON/OFF	1 #	Go to Preset 61
TOGGLE JOYSTICK PTZ/MENU CONTROL	2 #	Go to Preset 62
SET IN MENU	IRIS OPEN or 3 #	Go to Preset 63
DEFINE PRESET PATROL	4#	Go to Preset 64
RESET RECEIVER	PROGRAM 99 PRESET	Program 99 Preset

Notes:
Connect receiver + to the BBV 1-2-1 converter TA and receiver - to the BBV 1-2-1 converter TB.
Set the receiver address switches to match the number of the camera input of the matrix.

Molynx receivers can only be controlled when using BBV telemetry into the 1-2-1 converter ie from the BBV TX1500 or FBM series matrix.

Control of the receiver auxiliary relays is possible using the matrix Wash, Wipe and Lights keys.

Up to 32 preset positions can be programmed and recalled.

Dome mono/colour selection is possible using the **LIGHTS** button once the mono/colour switching has been set to MAN in the dome menu.

Preset Patrol Definition.
A single preset patrol can be defined which can contain up to 16 preset positions. The patrol speed and delay can be programmed as a global for each preset position. Use the following keystrokes.

4#
1 – **32 PRESET** This is the delay in seconds for all preset positions
1 – **32 PRESET** This is the speed to move between preset positions
1 is very slow and 32 is full speed

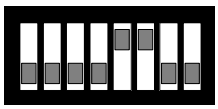
Next up to 16 preset positions, eg for patrol presets 1, 3, 6 and 17
1 PRESET, **3 PRESET**, **6 PRESET**, **17 PRESET**
MOVE JOYSTICK This ends the definition.

To start the preset patrol press **1 PATROL**

Improvement added in Version 30
SW4/8 can be used to allow the CAMERA POWER Aux to be operated from AUTOPAN allowing AUTOPAN control of AC receivers.
SW4/8 ON = enabled this feature, and SW4/8 OFF = disables

NIO D86/Intercepter (PELCO D) from BBV and Pelco D/P telemetry only

SW4



Connect the twisted pair as follows:
dome A+ to BBV 1-2-1 converter TA
dome B- to BBV 1-2-1 converter TB

Dome SW3 – Address, set to match the matrix camera input
Dome SW4 – 1 & 8 ON, 2-7 OFF, Selects PELCO & 9600 BAUD

The following functionality is provided.
Variable speed Pan/Tilt
Zoom/Focus/Iris
64 preset positions.
Menu access and navigation
Pattern record and playback
Tour 1 (preset patrol)
Autoscan (pan between limits)

Additional Dome features

Dome Function	TX1000 Keystroke	TX1500 Keystroke	Pelco Procedure
DISPLAY DOME MENU	hold # and tap **WASH** and navigate using the joystick and **IRIS** keys	**1** # and navigate using the Joystick and **IRIS** keys	Go to Preset 61
PATTERN RECORD START	hold # and tap **AUTOPAN** then use joystick to move dome around required scenes.	**3** # then use joystick to move dome around the required scenes.	Go to Preset 63
PATTERN RECORD STOP	hold # and tap **LIGHTS**	**4** #	Go to Preset 64
PATTERN PLAYBACK	**AUTOPAN**	**AUTOPAN**	Go to Preset 68
TOUR PLAYBACK	hold **PATROL** and tap **1**	**1 PATROL**	Go to Preset 66
AUTOSCAN PLAYBACK	hold **PATROL** and tap **2**	**2 PATROL**	Go to Preset 67

Note:
PATTERN
The dome pan/tilt/zoom will move through a defined movement.
Define the pattern first by **3#**, then move the dome to view the required areas. Once finished **4#** to end the definition. Press **AUTOPAN** to playback the pattern.

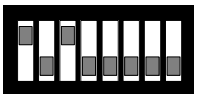
TOUR
This is a sequence of preset positions that the dome moves through. The tour is defined from within the dome menu.

AUTOSCAN
The dome will pan continually between two positions that are defined from within the dome menu.

For more information please refer to the dome handbook.

PANASONIC WV-CS850/860 (adjust SW3 to suit input protocol)

9600,N,8,1 or 19200,N,8,1



Function	TX1000 Procedure	TX1500 Procedure	Molynx	Pelco & Mark Mercer Procedure
Show/Hide dome Menu	# WASH	1 #	Cam on then Prog preset 1	Go to Preset 61
ENTER (whilst in menu)	# WIPE	2 #	Cam on then Prog preset 2	Go to Preset 62
ESCAPE (whilst in menu)	# AUTOPAN	3 #	Cam on then Prog preset 3	Go to Preset 63
SPECIAL2 (whilst in menu)	# LIGHTS	4 #	Cam on then Prog preset 4	Go to Preset 64
Send PATROL RUN	PATROL 1	1 PATROL	Cam on then Goto preset 5	Go to Preset 66
Send PATROL RUN to ALL DOMES	PATROL 2	2 PATROL	Cam on then Goto preset 6	Go to Preset 67
Send AUTOPAN	AUTOPAN	AUTOPAN	Cam on then Goto Preset 7	Go to Preset 68
BW MODE ON	N/A	89 PRESET	Cam on then Goto preset 8	Go to Preset 89
BW MODE OFF	N/A	88 PRESET	Cam on then Goto preset 9	Go to Preset 88
BW MODE AUTO	N/A	87 PRESET	Cam on then Goto Preset 10	Go to Preset 87

Switch and dome settings:
Ensure that each dome is configured BEFORE installation.
Output baud rate must be set to 19200,N,8,1 with SW4.
The dome must be set to Panasonic CONVENTIONAL protocol and the address set accordingly.
The 4 way dome switch must be set to 4 wire telemetry with switches 2,3,4 OFF. The RS485 cable requires termination at the end of the run by setting switch 1 ON.

The Panasonic CS850/860 protocol conversion is only available when controlled using BBV RS485 telemetry or Molynx. If another input protocol is selected using SW3 then the unit will not function and all the LEDs will flash until BBV protocol is selected again.

Due to protocol issues, the response of an individual dome may become sluggish if several domes are controlled simultaneously.

Connect TA to RA (green) and TB to RB (yellow).

Note:
When working with the TX1000 SW4/8 must be turned ON.

*To use this function firstly hilite and select"camera on ""** SET UP MENU**" screen
Then hilite "RET" on "**SET UP**" screen.
Finally pan right to hilite "Special 2"

PELCO P and PELCO D (adjust SW3 to suit input protocol)

Function	TX1500 Procedure	Pelco Procedure	Molynx	Mark Mercer Procedure
Display Dome Menu	1 #	Go to Preset 61	Cam on then Prog preset 1	Go to Preset 61
180 degree pan flip (U turn)	2 #	Go to Preset 62	Cam on then Prog preset 2	Go to Preset 62
Display Technicians Menu	3 #	Go to Preset 63 SW4/8 MUST BE OFF	Cam on then Prog preset 3	Not Supported
PATTERN DEFINE (START)	3 #	Go to Preset 63 SW4/8 MUST BE ON	Cam on then Prog preset 3	Go to Preset 63
PATTERN DEFINE (STOP)	4 #	Go to Preset 64 SW4/8 MUST BE ON	Cam on then Prog preset 4	Go to Preset 64
PATTERN PLAYBACK	AUTOPAN	Go to Preset 69 SW4/8 MUST BE ON	Cam on then Goto preset 5	Go to Preset 68
Start Random Scanning	PATROL 1	Go to Preset 66	Cam on then Goto preset 6	Go to Preset 66
Start Frame Scanning	PATROL 2	Go to Preset 67	Cam on then Goto Preset 7	Go to Preset 67

Use Iris open as Enter in menu.
This allows control of Pelco P and Pelco D units. Please ensure that the baud rate and parity are set correctly. Generally Pelco P uses 9600, N, 8, 1 and Pelco D uses 2400, N, 8, 1.

The Esprit wiper can be controlled using the TX1500 wiper function when SW4/7 is ON. With SW4/7 OFF the LIGHTS button is used. This is due to functions for each auxiliary number.

Function	Aux number SW4/7 ON	SW4/7 OFF
WASH	3	3
WIPE	1	2
LIGHTS	2	1

Additional of zone definition to allow zone blanking of Esprit PTZ heads.(not supported for Molynx)
Three steps are required to define and enable privacy zones.

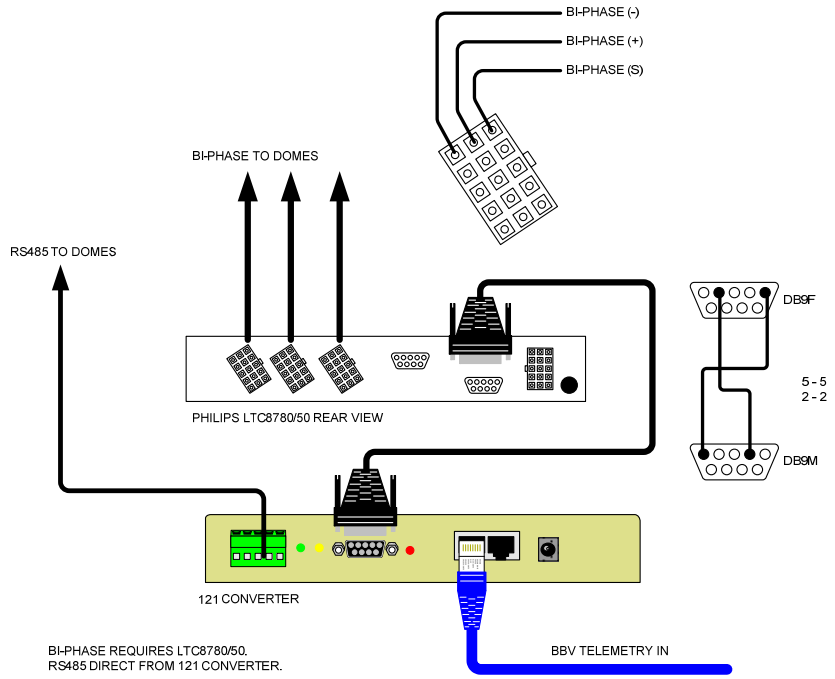
1. Move the camera to the left edge of required privacy zone then program preset 71 – 78. 71 for zone 1, 72 for zone 2 etc up to 78 for zone 8.
2. Now move the camera to the right edge of required privacy zone the program preset 81 – 88. 81 for zone 1, 82 for 2 etc up to 88 for zone 8
3. Next display the head menu and enable zone blanking for the required zone.

Philips RS232/485 (bi-phase via LTC8780/50) (adjust SW3 to suit input protocol)

SW4

Depending on the exact model type, Philips domes can be controlled using RS232 or RS485 and bi-phase telemetry.

Bi-phase telemetry is a proprietary twisted pair protocol that allows several domes to be daisy chained. A Philips LTC8780/50 1-2-1 converter is required in addition to the 1-2-1 converter when driving bi-phase telemetry.
Later domes with RS485 inputs can be driven directly from the 1-2-1 converter outputs without the need for a Philips LTC8780/50 1-2-1 converter as shown below.



Set the dome address using the rotary switches to match the number of the camera input of the TX1500. Ensure that any dome at the end of a daisy chained RS485 run has the RS485 terminated and the intermediate domes have the RS485 de-terminated.
If the dome only supports FastAddress™, a Philips controller must be used to set the dome address before installation. The 1-2-1 converter will not set the FastAddress ™.

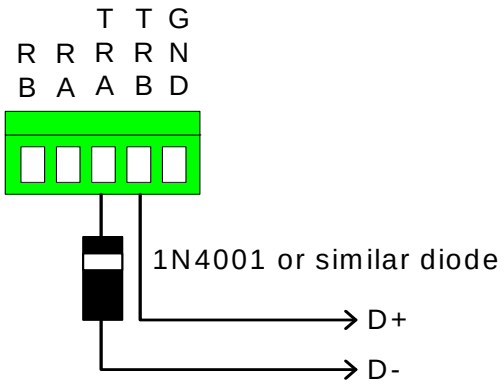
Dome Function	**TX1500 Procedure**	**Molynx**	**Pelco & Mark Mercer Procedure**
SET/SAVE PRESET (1-64)	PROGRAM NUMBER PRESET		
SHOW/GOTO PRESET (1-64)	NUMBER PRESET		
DISPLAY DOME MENU (AUX 46 ON)	1 #	Cam on then Prog preset 1	Go to Preset 61
PROGRAM ZONE TITLE (AUX 63 ON)	2 #	Cam on then Prog preset 2	Go to Preset 62
AUTOPLAY RECORD (AUX 100 ON/OFF)	3 # to start recording followed by either 3 # or AUTOPAN to stop recording.	Cam on then Prog preset 3	Go to Preset 63
DISPLAY SOFTWARE VERSION (AUX 66 ON)	4 # TWO times	Cam on then Prog preset 4	Go to Preset 64
RESET DOME (SET 899)	4 # FOUR times *(This will erase all preset positions and load default dome settings – use with care!)*	Cam on then Prog preset 4	Go to Preset 64 Not supported in Mark Mercer
START DOME PRESET TOUR (AUX 8 ON)	1 PATROL	Cam on then Goto preset 5	Go to Preset 66
START AUTOPLAY PLAYBACK (AUX 50 ON)	AUTOPAN	Cam on then Goto Preset 7	Go to Preset 68
DISPLAY PRESET TOUR MENU (SET 900)	PROGRAM 99 PRESET	Cam on then Prog preset 9	Program 99 Preset
DISPLAY PRESET TOUR PERIOD (AUX 15 ON)	PROGRAM 98 PRESET	Cam on then Prog preset 8	Program 98 Preset
DISPLAY PRESET MENU (SET 100)	PROGRAM 97 PRESET	Cam on then Prog preset 7	Program 97 Preset

PHOTOSCAN FIXED SPEED PAN/TILT from BBV and Pelco D/P telemetry only

SW4

The following functionality is provided:
Fixed speed Pan/Tilt
Zoom/Focus/Iris
WIPE drives the WI aux output
WASH drives the WA aux output
AUTOPAN drives the A2 output
LIGHTS has not been tested due to faulty receiver.

Star output



Photoscan receivers are driven using current loop telemetry.

The output of the 1-2-1 converter must have a diode fitted to each output as shown in the diagram on the left to allow control of the Photoscan units.

It is possible for the receivers to function without the diode but it is recommended that the diode is fitted to reduce the reverse voltage on the receiver's opto isolator input.

It is possible to connect multiple receivers to each star output this is not recommended.

NOTES:

1. **PLEASE READ THIS CAREFULLY FIRST.**
   Controlling more than one camera at the same time will cause intermittent telemetry control. This is because the BBV1-2-1 converter repeats commands to moving cameras. Receivers with a different address will stop moving until their command is repeated.

   Switching SW4/8 ON will disable the command repeats, but could cause control problems with Photo Scan domes.

2. Ensure that switches SW1/3&4 must be OFF. This disables the RS422 termination. Poor telemetry control can result if these switches are not off.

3. The 1-2-1 converter does NOT send a power up message when Photoscan protocol is selected because this will cause the telemetry receivers to move the camera as the protocol does not use checksums.

Samsung SCC641/643 dome and SCC421 camera from BBV and Pelco D/P telemetry only

SW4

SCC641/643 dome
Connect dome
RXD/+ to BBV Converter TA and dome
RXD/- to BBV Converter TB.
Set the dome address using the SW500 switch to match the number of the camera input of the TX1500. SW501 all off apart from 3 and 5 to select 9600 BAUD, SAMSUNG protocol and FULL duplex.

Ensure that any dome at the end of a daisy chained RS485 run are have switches SW401/1 and SW401/2 ON to terminate the RS485 terminated and the intermediate domes have the SW401/1 and SW401/2 OFF.

The following functionality is provided.
Manual pan/tilt control with 16 speed steps.
Zoom with Manual Focus override.
Operating the Zoom will re-enable auto focus after manual adjustment
64 preset positions.
AUTOPAN can be started with the AUTOPAN key.
PRESET SCAN can be started using 1 PATROL.
PATTERN 2 can be started using 2 PATROL.

The patterns are defined from the dome menu which is accessed using 1 # as below.

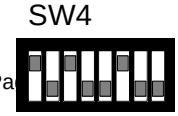
Advanced Function	**TX1500 Procedure**	**Pelco Procedure**
Dome Menu ON	1 #	Go to Preset 61
Dome Menu OFF	2 #	Go to Preset 62
Dome Menu ENTER	3 #	Go to Preset 63
Start PRESET SCAN	1 PATROL	Go to Preset 66
Start PATTERN 2	2 PATROL	Go to Preset 67
Start AUTOPAN	AUTOPAN	Go to Preset 68

SCC421P Static camera
Connect the camera RS485 Data+ to 1-2-1 converter TA and Data- to 1-2-1 converter TB.
Ensure that BAUD RATE is set to 9600 and RS485 ADDR is set to match the video input on the Tx1500 matrix. The buttons on the rear of the camera allow menu access.
Ensure that any camera at the end of a daisy chained RS485 run has the TERMINATION switch ON and the intermediate camera have the TERMINATION switch OFF.

The following functionality is provided.
Zoom with Manual Focus override.
To allow manual focus set AUTO FOCUS in the menu to either ONEAF for MF.
ONEAF will cause an AUTOFOCUS after a zoom and MF is permanently in manual focus mode.
Iris Open/Close.

Sensormatic RS422 (adjust SW3 to suit input protocol)

SW4



Connect dome RS422 IN + to BBV 1-2-1 converter TA and RS422 IN- to BBV 1-2-1 converter TB. Set the dome address to match the number of the camera input of the matrix.

The following functionality is provided.
Variable speed Pan/Tilt
Zoom/Focus/Iris
64 preset positions.
Menu access and navigation
Pattern #1 record and playback

Additional Dome features

Dome Function	**TX1500 Keystroke**	**Pelco & Mark Mercer Procedure**	**Molynx**
PATTERN #1 RECORD	1 # - start recording Move dome pan/tilt/zoom 1# - end recording (Note the dome does not support variable speed pan/tilt when recording a pattern)	Go to Preset 61 – Start Got to Preset 61 - Stop	Cam on then Prog Preset 1 Start Prog Preset 1 end
PATTERN #1 PLAYBACK	AUTOPAN	Go to Preset 68	Cam on then Goto 7
DISPLAY DOME MENU	4 # Navigate with joystick Focus near or far is ENTER and ZOOM in or out toggles options.	Got to Preset 64	Cam on then Prog 4

VCL TP – Fixed at 9600,N,8,1 (adjust SW3 to suit input protocol)

SW4

Connect dome
D+ to 1-2-1 BBV Converter TA and dome
D- to 1-2-1 BBV Converter TB.
Set the dome address using the DIL switch to match the number of the camera input of the TX1500. Ensure that any dome at the end of a daisy chained RS485 run are have the RS485 terminated and the intermediate domes have the RS485 de-terminated.

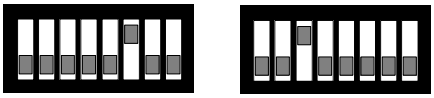
The following functionality is provided.
Manual pan/tilt control with 16 speed steps from 1 to 127, (slowest to fastest)
Zoom with Manual Iris and Focus override.
Operating the Zoom will re-enable auto focus and iris after manual adjustment
32 preset positions.
2 sequential preset tours of preset positions 1 - 16, tour 1 maximum speed and tour 2 speed 32. The dwell time is fixed at 10 seconds per preset position. Preset positions can be removed from the tours.
All 28 privacy zones can be programmed and disabled if required.

Advanced Function	**TX1500 Procedure**	**Molynx**
Program a privacy zone	**2 #** followed by **PROGRAM 1-28 PRESET**	Cam on then Prog preset 2
Clear a privacy zone	**3 #** followed by **PROGRAM 1-28 PRESET**	Cam on then Prog preset 3
Dome remote reset (power cycle)	**4 #**	Cam on then Prog preset 4
Add preset position to the tours	Programming a preset position adds the preset into the tour. (1 – 16 only)	
Remove a preset from the tours	**PROGRAM 50 PRESET** followed by **1-16 PRESET**	Cam on then Prog preset 13
Start preset tour 1 – high speed	**1 PATROL** (max speed with 10 second dwell)	Cam on then Goto preset 5
Start preset tour 2 – slow speed	**2 PATROL** (speed 32 with 10 second dwell)	Cam on then Goto preset 6
Start Learned tour 5	**AUTOPAN** (must be defined with PROGRAM 56 PRESET as below)	Cam on then Goto preset 7
Set Home functions (fixed at 5 minutes)	**PROGRAM 54 PRESET** followed by **1 PRESET** = Enable to preset 1 **2 PRESET** = Enable to tour 1 (fast) **3 PRESET** = Enable to tour 2 (slow) **4 PRESET** = Enable to learned tour (autopan) **5 PRESET** = Disable home	Cam on then Goto preset 8
Reset dome to factory. USE CAUTION!! This command will clear all dome configuration including preset positions.	**PROGRAM 55 PRESET** followed by **PROGRAM 55 PRESET**	Cam on then Goto preset 9
Define learned tour 5 – START	**PROGRAM 56 PRESET**	Cam on then Goto preset 10
Define learned tour 5 – STOP	**PROGRAM 57 PRESET**	Cam on then Goto preset 11
Enable AUTO180 pan flip	**PROGRAM 58 PRESET**	Cam on then Goto preset 12

VCL TP – When using Pelco input protocol

Advanced Function	Pelco & Mark Mercer procedure
180 degree pan flip (U turn)	**SAVE PRESET 95**
Program a privacy zone	**GOTO PRESET 33 followed by PROGRAM 1-28 PRESET**
Clear a privacy zone	**GOTO PRESET 94 followed by PROGRAM 1-28 PRESET**
Dome remote reset (power cycle)	**Head reset**
Add preset position to the tours	**Saving a preset position adds the preset into the tour. (1 – 16 only)**
Remove a preset from the tours	**PROGRAM 50 PRESET followed by GOTO PRESET 1-16**
Start preset tour 1 – high speed	**GOTO PRESET 97 (max speed with 10 second dwell)**
Start preset tour 2 – slow speed	**GOTO PRESET 98 (speed 32 with 10 second dwell)**
Start Learned tour 5	**GOTO PRESET 99 (must be defined with SAVE PRESET 56 as below)**
Set Home functions (fixed at 5 minutes)	**PROGRAM 54 PRESET followed by GOTO PRESET 1 = Enable to preset 1 GOTO PRESET 2 = Enable to tour 1 (fast) GOTO PRESET 3 = Enable to tour 2 (slow) GOTO PRESET 4 = Enable to learned tour (PRESET 99) GOTO PRESET 5 = Disable home**
Reset dome to factory. USE CAUTION!! This command will clear all dome configuration including preset positions.	**SAVE PRESET 55 followed by SAVE PRESET 55**
Define learned tour 5 – START	**SAVE PRESET 56**
Define learned tour 5 – STOP	**SAVE PRESET 57**
Enable AUTO180 pan flip	**SAVE PRESET 58**

SW3 SW4



VCL TP – from 360 Vision Protocol

From 360 Vision matrix, connect Data+ to solid blue wire into BBV 1-2-1 converter and Data- to white/blue wire into BBV 1-2-1 converter. Connect dome D+ to STAR TA and dome D- to STAR TB.
Set the dome address using the DIL switch to match the number of the camera input of the matrix. Ensure that any dome at the end of a daisy chained RS485 run are have the RS485 terminated and the intermediate domes have the RS485 un-terminated.

The following functionality is provided.
Pan/Tilt/Zoom/Focus/Iris
Auto/Manual Focus and Iris switching
127 preset positions
Tour 1-4 definition and playback, preset 1-127 and dwell of 2-254 seconds (2 second increments)
Mimic Tour 1-4 definition and playback (VCL tour 5-8)
Privacy zones 1-28 can be programmed and toggled ON/OFF (VCL preset 100-127)
180 degree flip enable/disable on tilt down
Home functions, preset 1-127 or tour 1-4 with 1-127 minute delay
A1 and A2 toggle dome mono/colour but dome will auto switch back to colour if the scene if bright enough.
LOCK A3 – toggles Wiper ON/OFF (in CONV1_V24 and later software)

Please read the 360 Vision keyboard manual for details of keystrokes etc.

Vicon Surveyor (adjust SW3 to suit input protocol)

SW4

Connect dome
COMM_IN+ to BBV 1-2-1 Converter TA and dome
COMM_IN- to BBV 1-2-1 Converter TB.

Set the dome address using the DIL switch to match the number of the camera input of the TX1500. Ensure that any dome at the end of a daisy chained RS485 run are have the RS485 terminated and the intermediate domes have the RS485 de-terminated.
Select VPS telemetry using dome DIP DIL.

The following functionality is provided.
Manual pan/tilt control with 16 speed steps.
Zoom with Manual Focus override.
Operating the Zoom will re-enable auto focus after manual adjustment
64 preset positions.
3 tours can be started, tour 81 and 82 using 1 PATROL and 2 PATROL and tour 80 with AUTOPAN.
The tours are defined from the dome menu.

Advanced Function	**TX1500 Procedure**	**Molynx**	**Pelco & Mark Mercer Procedure**
Display dome menu	1 #	Cam on then Prog preset 1	Go to Preset 61
MENU AP – ENTER	IRIS OPEN	IRIS OPEN	IRIS OPEN
MENU AI – ESCAPE	IRIS CLOSE	IRIS CLOSE	IRIS CLOSE
AUX 1	WASH		
AUX 2	WIPE		
AUX 3	LIGHTS		
Start TOUR 81	1 PATROL	Cam on then Goto 5	Go to Preset 66
Start TOUR 82	2 PATROL	Cam on then Goto 6	Go to Preset 67
Start TOUR 80	AUTOPAN	Cam on then Goto 7	Go to Preset 68

It is very important that once you have exited the dome menu you send a 1 PRESET to inform the 1-2-1 converter that you are out of the dome menu.

The output baud rate can be selected between 4800 and 9600 baud. SW4/8 ON = 4800 baud, SW4/8 OFF = 9600 baud. Generally 9600 baud will be used on late systems and 4800 baud on early systems.

Support for earlier V1305DC DC telemetry receivers.
SW4/7 ON and SW4/8 ON

These receivers use 4800 baud so SW4/8 must be ON.

SW4/7 must also be ON to enable control of this receiver type. When in this mode, the WASH function drives Aux 4 which is the only momentary output.

VIDECON VCP451 CAMERA from BBV and Pelco D/P telemetry only

Connect the twisted pair as follows:
Camera RS485+ to BBV 1-2-1 converter TA
Camera RS485- to BBV 1-2-1 converter TB

SW4

The following functionality is provided:
ZOOM, FOCUS
Menu Access

Advanced Dome features

Dome Function	TX1000 Keystroke	TX1500 Keystroke	Pelco Procedure
DISPLAY MENU Use the joystick to navigate the menu or zoom for up/down and focus for left/right	hold # and tap **WASH**	**1** #	Go to Preset 61

Note:
Use the MENU switch on the camera to set the following before connecting to the 1-2-1 converter.
CAMERA ID – This must match the camera input of the matrix
PROTOCOL – P/D to allow control (PELCO D, 2400,N,8,1)

The camera uses the zoom and focus functions whilst navigating the menu to make it easier to use the joystick. Pan generates zoom and tilt generates focus even when not displaying the dome menu. This is NOT a fault!

For more information please refer to the camera handbook.

VIDECON VHSD 860 DOME (adjust SW3 to suit input protocol)

SW4

Connect the twisted pair as follows:
Dome D+ to BBV 1-2-1 converter TA
Dome D- to BBV 1-2-1 converter TB

The following functionality is provided:
Variable speed Pan/Tilt
Zoom/Focus/Iris
64 preset positions
Menu Access (Iris open – Enter Iris Close – Exit)
Privacy Menu Access
Pattern Tour 1 define and playback, Auto Patrol playback, Frame Scan playback

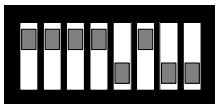
Advanced Dome features

Dome Function	**TX1000 Keystroke**	**TX1500 Keystroke**	**Molynx**	**Pelco & Mark Mercer Procedure**
DISPLAY MENU	hold # and tap **WASH**	1 #	Cam on then Prog Preset 1	Go to Preset 61
DISPLAY PRIVACY MENU	hold # and tap **WASH**	2 #	Cam on then Prog Preset 2	Go to Preset 62
DEFINE PATTERN 1 START	hold # and tap **AUTOPAN**	3 #	Cam on then Prog Preset 3	Go to Preset 63
DEFINE PATTERN 1 STOP	hold # and tap **LIGHTS**	4 #	Cam on then Prog Preset 4	Go to Preset 64
PATTERN 1 PLAYBACK	**AUTOPAN**	AUTOPAN	Cam on then Goto 5	Go to Preset 68
AUTO PATROL PLAYBACK *	hold **PATROL** and tap **1**	1 PATROL	Cam on then Goto 6	Go to Preset 66 Not supported in Mark Mercer
FRAME SCAN PLAYBACK	hold **PATROL** and tap **2**	2 PATROL	Cam on then Goto 7	Go to Preset 67 Not supported in Mark Mercer
IR FILTER ON/OFF	Not possible	ON (MONO) 89 PRESET OFF (COLOUR) 88 PRESET	Cam on then Prog 8 – off Cam on then Prog 9 - on	ON (MONO) Go to 89 Preset OFF (COLOUR) Go to 88 Preset Not supported in Mark Mercer

Note:
Please ensure the three dome switches are set as follows:
Dome back plate 4 way switch – ALL OFF to select PELCO P
Dome 2 way switch – BOTH ON to select 9600 BAUD
Dome 8 way switch – set the address to match the camera input of the matrix
*Please note Auto Patrol Playback outputs goto preset 70 but our dome does nothing.
For more information please refer to the dome handbook.

VIDEOTEC ULISSE (PELCO D) from BBV and Pelco D/P telemetry only

SW4



Connect the twisted pair as follows:
Ulisse 485/A to BBV 1-2-1 converter TA
Ulisse 485/B to BBV 1-2-1 converter TB

Ulisse Switch settings
BAUD RATE – 4 ON, 3 OFF, 2 ON, 1 OFF
PROTOCOL – 1 ON, 4 ON, ALL OTHERS OFF
ADDRESS – 9 ON, 1-8 SETS THE ADDRESS AS ULISSE MANUAL

The following functionality is provided:
Variable speed Pan/Tilt
Zoom/Focus/Iris
64 preset positions.
Start Patrol
Start AUTOPAN
Menu access and navigation

Additional Dome features

Dome Function	**TX1000 Keystroke**	**TX1500 Keystroke**	**Pelco Procedure**
DISPLAY MENU	hold # and tap **WASH** and navigate using the ZOOM **IN** = ENTER, **OUT** = BACK	**1** # and navigate using the joystick and ZOOM **IN** = ENTER, **OUT** = BACK	Go to Preset 61
AUTO WASH/WIPE	**WASH** SW4/8 = OFF (factory default)	**WASH** SW4/8 = OFF (factory default)	3 AUX SW4/8 = OFF (factory default)
RELAY O1/C1	**WASH** SW4/8 = ON	**WASH** SW4/8 = ON	3 AUX SW4/8 = ON
WIPE	**WIPE**	**WIPE**	2 AUX
LIGHTS O2/C2	**LIGHTS**	**LIGHTS**	1 AUX
START PATROL	HOLD **1** TAP **PATROL**	**1 PATROL**	Go to Preset 66
AUTOPAN	**AUTOPAN**	**AUTOPAN**	Go to Preset 67

Note:
WASH function can either control Ulisse relay output O1/C1 or to start the head auto wash/wipe feature.

SW4/8 is used to switch between these modes. The factory setting is with SW4/8 OFF = WASH starts the auto wash/wipe function.
Head moves to Preset 1, the WASH is activated for a time set in the head menu and then the Wiper operates for another time configured in the head menu before returning the head to the original position.

If this feature is not required the O1/C1 relay can be controlled instead by switching SW4/8 ON.

For more information please refer to the Ulisse handbook.

Vista PowerDome (adjust SW3 to suit input protocol)

SW4

Connect dome DATA IN A/+ to BBV 1-2-1 Converter TA and
dome DATA IN B/- to BBV 1-2-1 Converter TB.

Set the dome address using the DIL switch to match the number of the camera input of the TX1500. Ensure that any dome at the end of a daisy chained RS485 run are have the RS485 terminated and the intermediate domes have the RS485 de-terminated.

The following functionality is provided.
Manual pan/tilt control with 16 speed steps.
Zoom with Manual Focus override.
Operating the Zoom will re-enable auto focus after manual adjustment
64 preset positions.
3 tours can be started, TOUR 1 and 2 using 1 PATROL and 2 PATROL and LEARN TOUR 1 with AUTOPAN.
The tours are defined from the dome menu which is accessed using 1 # as below.

Advanced Function	**TX1500 Procedure**	**Pelco & Mark Mercer Procedure**
Display dome menu	1 #	Go to Preset 61
Menu – ENTER	2 #	Go to Preset 62
Menu – ESCAPE	3 #	Go to Preset 63
Start TOUR 1	1 PATROL	Go to Preset 66
Start TOUR 2	2 PATROL	Go to Preset 67
Learn 1 playback	AUTOPAN	Go to Preset 68

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You must register for the extended warranty within 12 months of the date of manufacture.

How to register for the 3 year warranty

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BBV 3 Year Warranty

If this card is returned with the serial number of the product and the Installation company details BBV will extend the warranty period from 12 Months to 36 Months.

☐ Number of Units, ☐ Start Serial No. ☐ Final Serial No.

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Company Name._____

Phone Number._____

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Address 1._____

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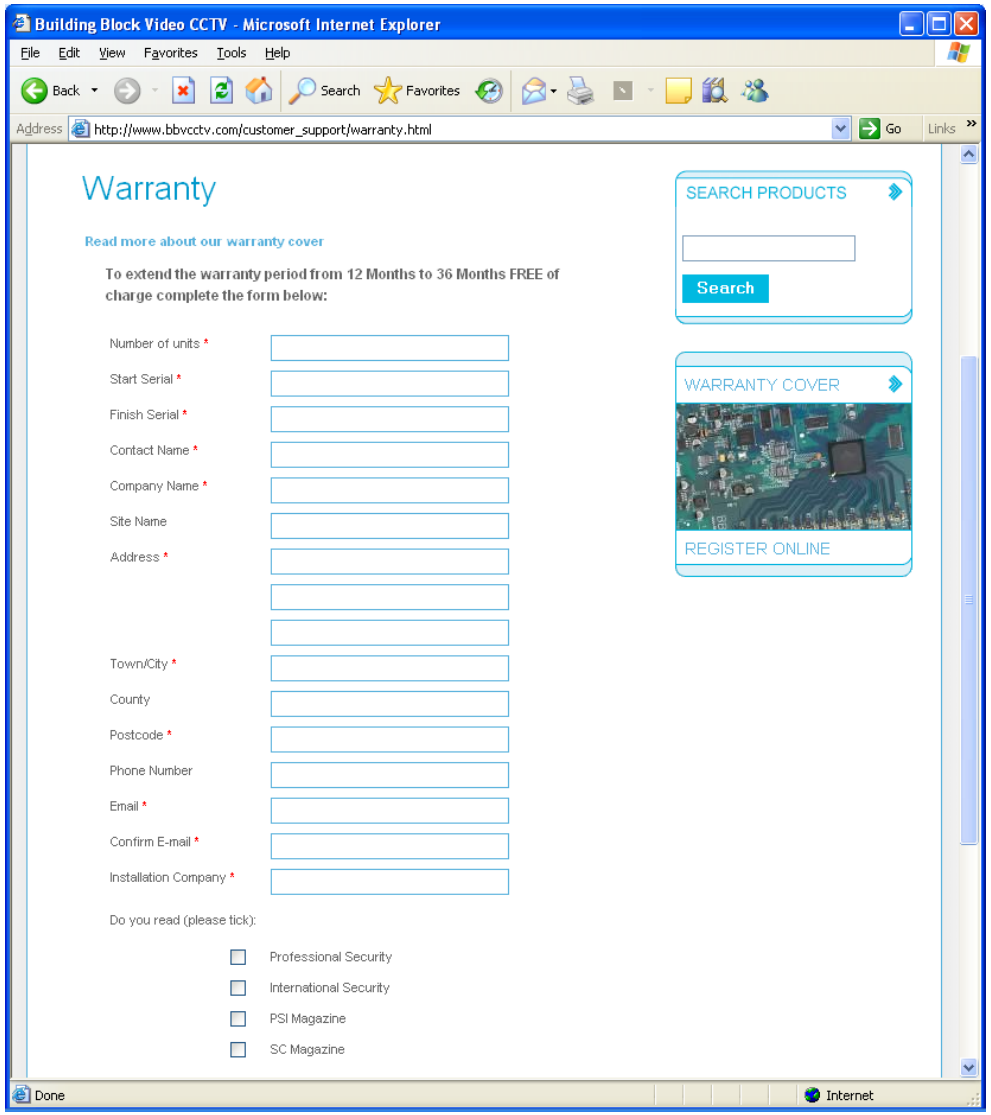

Building Block Video Ltd

Tel: + 44 (0) 1323 842727
Fax: + 44 (0) 1323 842728
Support: + 44 (0) 1323 444600
www.bbvcctv.com